

# FLIGHT

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ENGINEER  
&  
AIRSHIPS

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## Flight

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## "FLIGHT" PHOTOGRAPHS.

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## DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list :—

1927

Aug. 20—

Sept. 2 .... International Aero Exhibition, Copenhagen.

Sept. 5 .... Gordon-Bennett Balloon Race, Detroit, U.S.A.

Sept. 25 .... Schneider Trophy Race at Venice.

Oct. 20 .... Aero Golfing Soc. (Cellon Cup), Walton Heath.

Oct. 31 .... Guggenheim Safe - Aircraft Competition Closes

## EDITORIAL COMMENT.



### Breaking new Ground

There are those who are very fond of saying that no improvement in the aerodynamic design of aircraft has been made during the last ten years or so, and that the increase in performance which is an undeniable fact, is almost entirely due to improvements in aero engines, and more particularly to the vast increase in the power of aero engines. While there is, as usual in such cases, a certain amount of truth in this contention, we are not among those who would ascribe modern performance *entirely* to the power of the engines used. By their production of the "Tiger Moth" the de Havilland Aircraft Company has given a very striking proof of what careful aerodynamic design can do. In the leg of the King's Cup Race near Nottingham from Hucknall Aerodrome to Spittlegate, Captain Broad's speed was timed to be 166 miles per hour. Allowing for the fact that there was a good deal of wind, which was more or less blowing across the course, and may have been a little on the quarter, there can be no doubt that the machine is, at any rate, capable of a speed of 158 m.p.h., fitted with the "Cirrus Mark II" engine, which develops 84 b.h.p. at maximum permissible revolutions. Granting that the particular engine had been "boosted" somewhat for the King's Cup Race, it is doubtful if Broad was taking 100 h.p. from his engine. Anyway, for rough and ready comparisons it is sufficiently accurate to say that the engine developed about 100 h.p., and that the speed was just under 160 m.p.h. When fitted with the new de Havilland engine there is every reason to believe that the "Tiger Moth" will do at least 180 m.p.h.

It seems likely that the majority of our readers may have forgotten that in 1913, the French pilot Prevost won the Gordon-Bennett race at an average speed of 124 m.p.h., and that the actual top speed of his Deperdussin monoplane was about 130-132 m.p.h. Now that machine, general arrangement drawings of which were published in FLIGHT of November 22, 1913, had a wing span of 21 ft. 10 in., or about the same as that of the "Tiger Moth." Its

wing area was 104 sq. ft., which is a good deal more than the area of the de Havilland machine. The total loaded weight of Prevost's Deperdussin was 1,350 lb., which is probably considerably in excess of that of the "Tiger Moth," but, and this is the point, the engine was a Gnome of 160 h.p. Thus, it is seen that in modern times we can produce a machine which is 23 per cent. faster, with an engine developing only 63 per cent. of the power. Granted that the lighter weight of the modern machine has something to do with the increase, it is still fairly obvious that considerable progress has been made in aerodynamic design.

The production of the "Tiger Moth" opens up a number of interesting possibilities. For instance, as a pure racing machine it is obviously worthy of development, and if other firms were to follow suit, speed races at really high speed would become possible. Thus, without going into such fabulous cost as are entailed in producing machines like those built for the Schneider Cup Race, for instance, we could hold an Aerial Derby really worthy of the name. That racing these small machines would teach us much which might be applied in the production of very high-powered racing machines cannot be doubted. In fact, we believe that the de Havilland Company regards the "Tiger Moth" in the light of high-speed research at reasonable cost.

But the possibilities do not end here. The "Tiger Moth" handles, we gather from Captain Broad, the only pilot who has flown the machine so far, very much like the high-speed Schneider machines. It requires as delicate handling of the controls, it does a really high speed, and it is, in short, no sort of machine for the "ham-fisted" pilot. At the moment the machine is even too sensitive on the controls. This can be remedied, and we do not doubt that it will be remedied. But the point is that it is possible to provide in the "Tiger Moth" all the necessity for delicacy of treatment which is needed in the highest-powered racers. Would it not, therefore, be a good plan to equip the "High-speed Flight" pilots with these machines in order to enable them to practice at relatively trifling cost? Presumably, it is too

late to do anything this year, but we assume that, whether Great Britain wins the Schneider Cup Race or not, the high-speed programme will not be abandoned, and in that case, the more practice our pilots can get, or, looked at in another way, the greater the number of pilots who can get high-speed experience, the better for the R.A.F. The service already possesses "Genet-Moths" used for aerobatics. Why not "Tiger Moths" used for high-speed training?

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**Aircraft  
to shorten  
Sea  
Journeys**

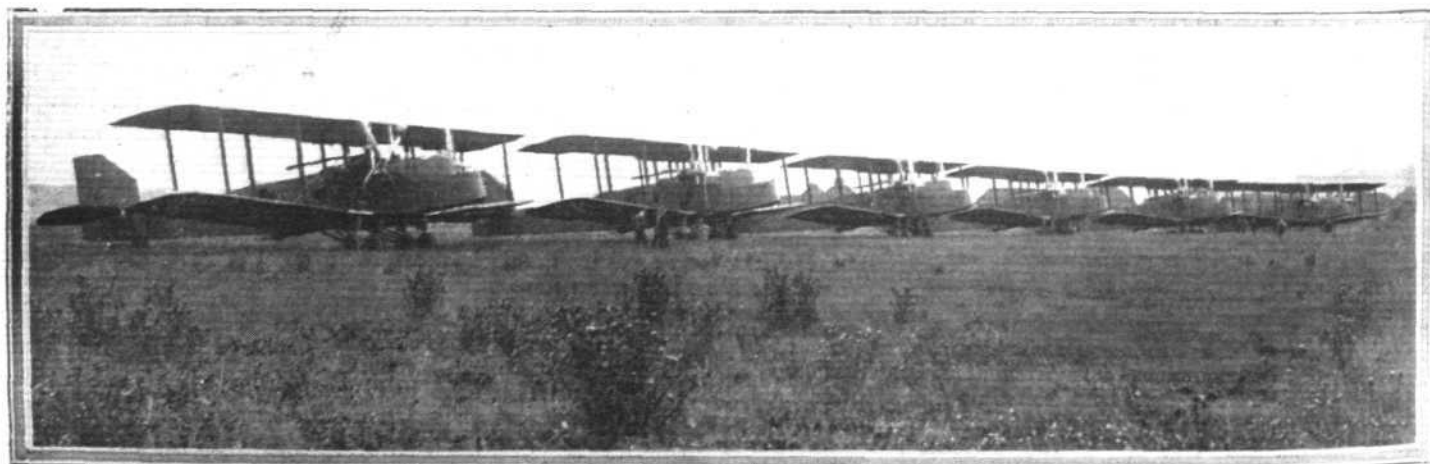
Although some rather exaggerated claims have been made for the utility of aircraft flying from liners to the shore, there is no doubt that under certain circumstances a very considerable saving of time might be effected. Thus, Mr. Chamberlin has done good pioneer work in flying from the deck of a liner to a New York aerodrome. We do not envisage any immediate possibility of all the passengers of the *Mauretania* being hustled into New York by air two days earlier than they would otherwise reach "The Great White Way," but if the demand is sufficiently insistent (and persistent), there is no very great technical difficulty in arranging for the mails to be accelerated in this manner. Let us assume, for instance, that a machine is used which carries five hours' fuel at a speed of 100 m.p.h., and a sufficiently large paying load to be worth while. Such a machine would be "released" when the steamer was some 500 miles out, and would reach its destination in 5 hours. A fast liner would probably take roughly 24 hours to do the 500 miles, so that there would be a net saving of time of 19 hours. If it should prove feasible to arrange for machines also to alight on the liner, the reverse process could be applied at the other end, the liner leaving at its usual time, the mail plane starting some 19 hours later and alighting on the liner some 500 miles out, thus saving 36-38 hours on the total journey. There might be services where this saving in time would be worth while. In the meantime, the experiment made by Chamberlin is interesting and goes a long way towards showing the feasibility of the project from the technical point of view.

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**Copenhagen Aero Show**

A BRISTOL two-seater fighter and Bristol "Jupiter" and "Lucifer" engines will alone represent England at the Copenhagen Aero Show which opens on August 20. The

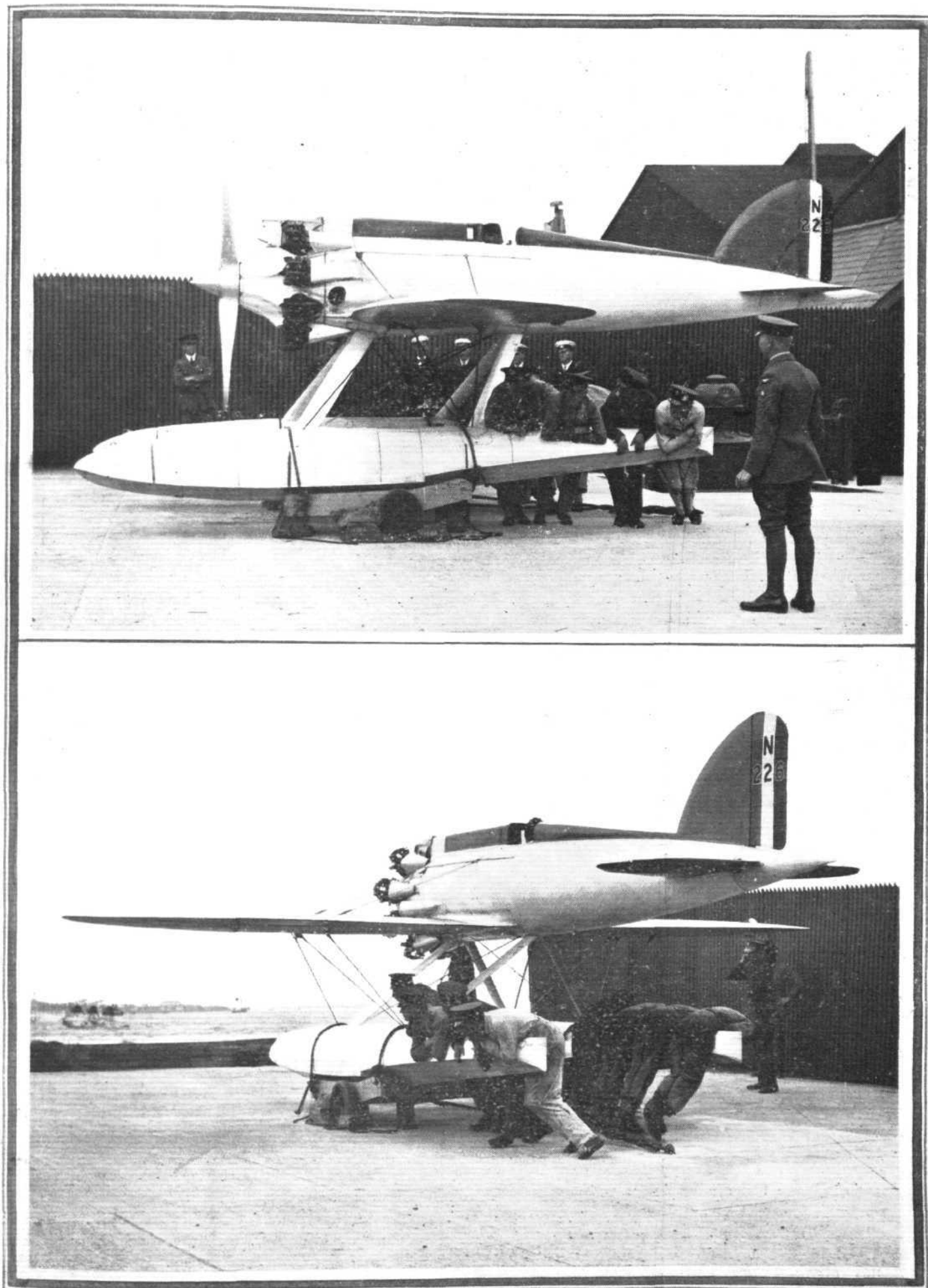
"Jupiter" is made under licence in six countries in Europe, and about 2,000 have been built. This is the only type of engine for which provision has been made by the Norwegian Air Service in the year's programme.



[ "FLIGHT" Photograph

NOT FOR A LIGHT PLANE CLUB: A batch of six Handley Page "Hyderabad" bombers (Napier "Lion" engines) ready for delivery to No. 99 (Bombing) Squadron, R.A.F.

# THE THIRD BRITISH SCHNEIDER CHALLENGER



[“ FLIGHT Photographs

THE AIR-COOLED CHALLENGER: Two views of the Short-Bristol “ Crusader ” mono-seaplane. Each of the nine cylinders of the Bristol “ Mercury ” air-cooled engine are streamlined by “ helmets ”—one of which is shown in situ.



# THE 1927 SCHNEIDER TROPHY CONTEST

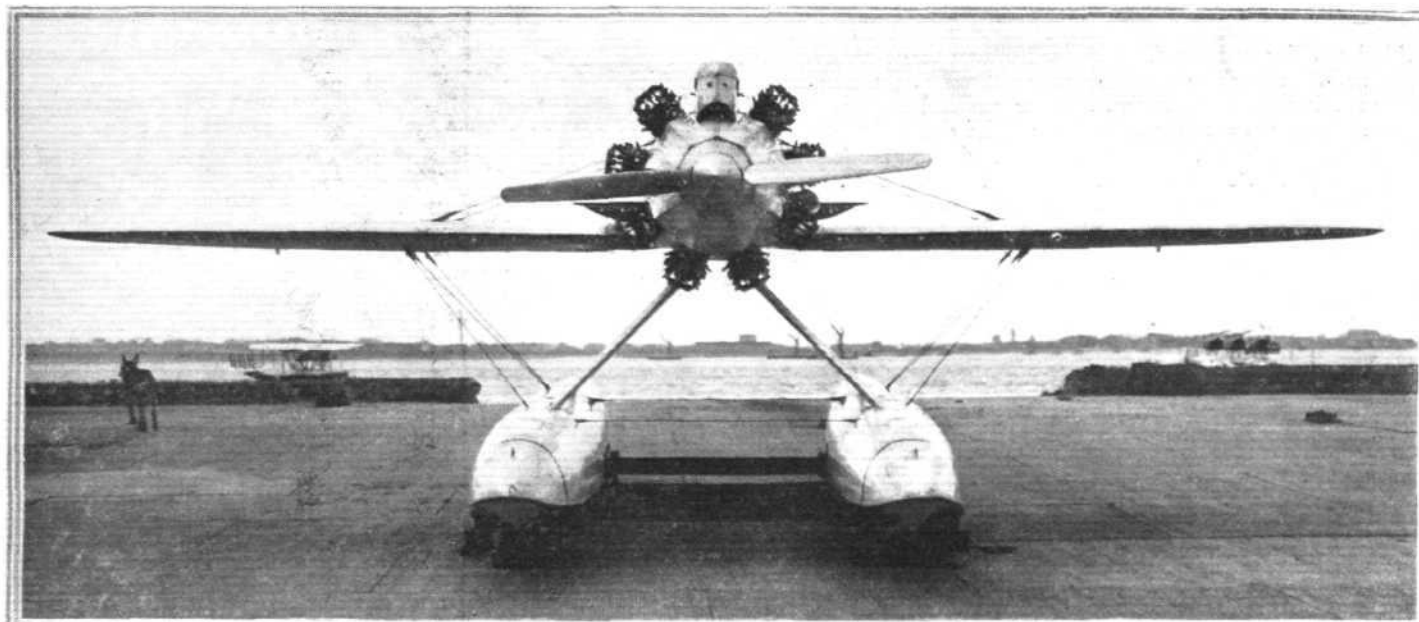
## Some Notes on the "Crusader" and the Race Itself

IN last week's issue of *FLIGHT* we were able to give some particulars of two of the three British challengers for this year's Schneider Trophy contest, and we now follow this up with some brief notes on the third machine constructed for this important event.

As announced last week, three types of high-speed seaplanes were constructed to Air Ministry order—our participation in this year's contest being a "Service operation"—the Gloster-Napier IV, the Supermarine-Napier S-5 (both of which types

seaplane, designed for the firm of Lieut.-Col. W. A. Bristow, Consulting Engineers and Aircraft Designers, by Mr. W. G. Carter—whose name is not unfamiliar to many of our readers, and who was at one time designer to the H. G. Hawker Engineering Co.

It was constructed by Short Bros., Ltd., of Rochester, and is fitted with a Bristol "Mercury" air-cooled radial engine. This latter feature alone makes the "Crusader" a machine of more than usual interest, as this is the first time that a machine



[*"FLIGHT"* Photographs

**THE THIRD BRITISH SCHNEIDER CHALLENGER:** Front view of the Short-Bristol "Crusader" mono-seaplane, which is fitted with a Bristol "Mercury" air-cooled radial engine.

were dealt with last week), and the Bristow-Short-Bristol "Crusader." On Thursday last this latter machine was "on view" at the Felixstowe Air Station, and we are thus enabled to give herewith some particulars and illustrations of the "Crusader." We cannot, of course, as explained before, give anything but a general outline of its characteristics.

The "Crusader," like the "S-5," is a low-wing mono-

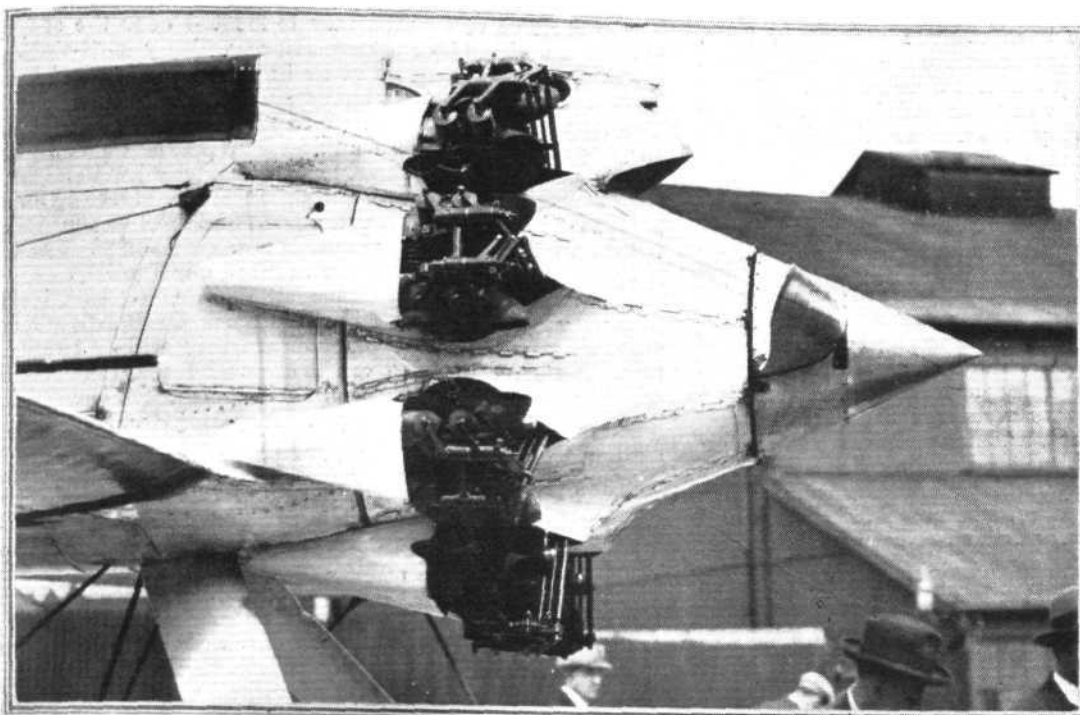
of this type—a high-speed racing seaplane—has been fitted with an air-cooled radial engine (excepting, of course, the early rotary engines). In fact, it was with the object—apart, of course, from bringing back the "Cup"—of testing out the possibilities of high-speed seaplanes fitted with air-cooled engines that the "Crusader" was designed.

An air-cooled engine naturally presents a greater frontal



[*"FLIGHT"* Photograph

**THE OTHER TWO BRITISH CHALLENGERS:** So as to enable our readers to form a comparison of all three machines we give herewith views of the Supermarine-Napier S-5 and the Gloster-Napier IV—both of which were described in last week's *FLIGHT*.



["FLIGHT" Photograph  
The "Crusader's"  
Prime-Mover:  
A close-up of the  
Bristol "Mercury"  
engine,  
showing one of  
the "helmets"  
in place, on the  
top cylinder.

area than a water-cooled engine, but the compensating advantages of the air-cooled engine—low weight per horsepower being, perhaps, the most important—made this an experiment of considerable importance. It is certainly an interesting problem, and in the case of the "Crusader" called for much research in order to devise a means of reducing head resistance and at the same time maintaining sufficient cooling for the cylinder heads.

This has been successfully accomplished by means of a series of metal "helmets" which fit over each cylinder head and merge into the fuselage so as to follow the streamline as much as possible. With these helmets *in situ*, the machine looks like a Crusader indeed.

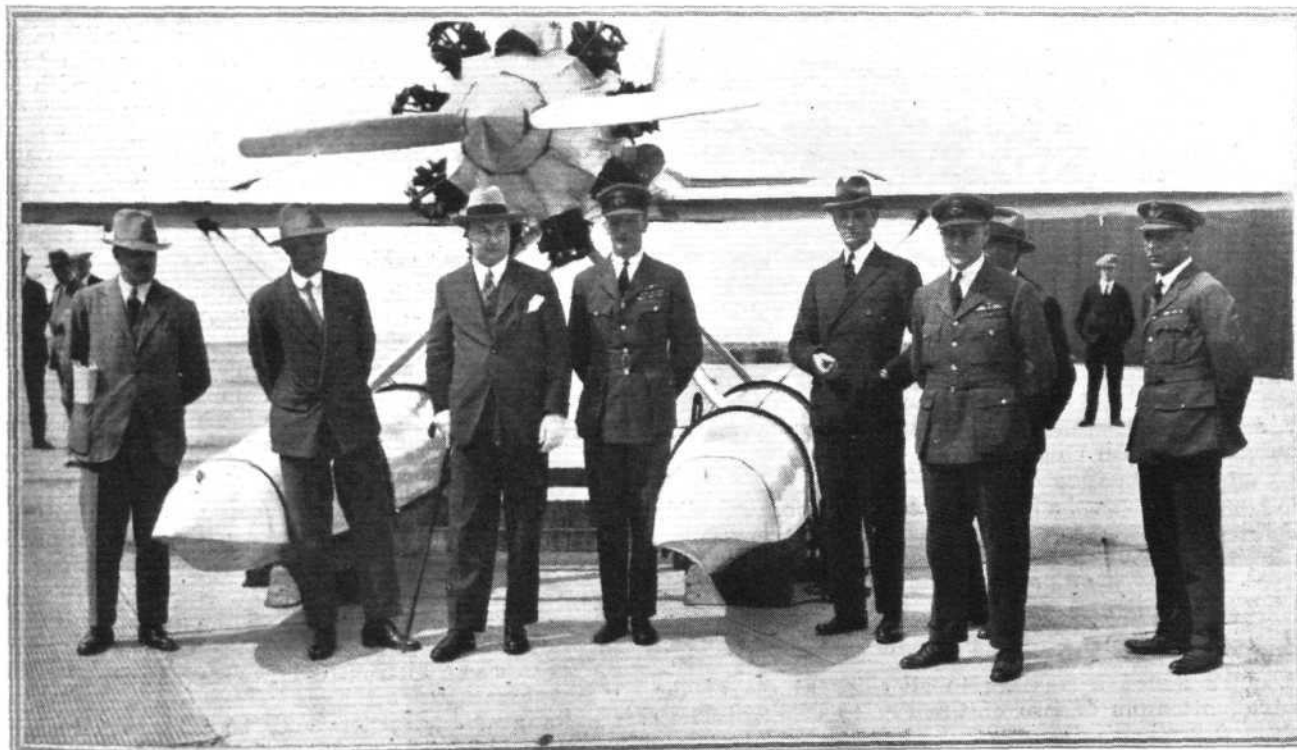
The trials that have already been carried out with the "Crusader" have demonstrated that the "experiment" has met with no small measure of success, in which the Bristol company can claim, in the production of the "Mercury," a considerable share. It may be of interest to note that the weight of the whole machine, complete with engine, is less

than what was considered in the early days of aircraft development to be a reasonable figure for an engine alone!

The fuselage of the "Crusader," which is well streamlined (of cigar shape) is of monocoque form, mainly constructed of double-plank mahogany, the forward and engine portion being of steel tube. Special attention has been directed towards the position of the pilot, who is located near the c.g., a little way back from the wings, where he obtains a good all-round view. It will be noted that the stern of the fuselage terminates in a sharp point a short distance behind the tail surfaces. A continuous fairing extends along the top of the fuselage from the top engine-cylinder to cockpit and from cockpit to fin, as in the S-5.

The wings are of medium thickness, with streamline wire bracing, and are neatly faired into the lower portion of the fuselage. While the vertical fin is large, the elevators are comparatively small.

The floats, of metal, have been designed specially for the machine by Short Bros., under the direction of Mr. Gouge,



["FLIGHT" Photograph

SOME OF THE "CRUSADERS": Reading from left to right—Maj. Abell (Bristol Co.); Mr. W. G. Carter (designer of the "Crusader"); Lieut.-Col. W. A. Bristow; Sq.-Ldr. Slatter (chief pilot of the team); Mr. Oswald (constructor of the machine); next to Mr. Short but obscured is Mr. Gouge, his chief designer; and two of the team, Flying Officers H. M. Schofield and T. H. Moon.



Chief Designer. They have been evolved along new lines, after a considerable amount of research and experiments with models in the testing tanks at the Rochester works. We are informed that they have proved most satisfactory, and the machine takes off and lands very easily, there being a minimum of spray, and their air resistance is very low.

### The Bristol "Mercury" Engine

As regards the Bristol "Mercury" engine fitted in the "Crusader," we are afraid we can say very little just now. There is no doubt, however, that it constitutes one of the biggest advances yet made in the development of the air-cooled radial engine. The "Mercury," which is probably the lightest engine for the power developed in the world, is an improved version of the famous "Jupiter," having, as with the latter, nine cylinders disposed radially around the crankshaft. While its power is considerably greater, its frontal area has been reduced, and it is, in fact, a remarkably compact engine for its power.

A special metal airscrew is employed, the blades of which are constructed of a secret alloy, ground and polished to a very high degree of efficiency. A sharp pointed metal spinner is fitted over the boss.

While the "Crusader" is not expected to be quite so fast as the Supermarine-Napier S-5, it can, however, claim to be the fastest machine fitted with an air-cooled engine in the world, and also the lightest loaded machine per horsepower. During its trials the "Crusader," despite its high speed, proved to be particularly easy to fly, and possessed an excellent degree of stability and manoeuvrability. Another point worthy of note is that no important modification has been necessary at any stage since its first flight!

### This Year's Contest

Before concluding these notes it may, perhaps, be desirable to give some brief particulars regarding the arrangements for this year's race itself. This is the tenth contest for the Schneider Trophy, which was given by the late M. Jacques Schneider in 1913 to the Aero Club of France for an annual speed contest between seaplanes of any nationality (each country being allowed to enter a maximum of three machines). The country that wins the race three times within five years wins the Trophy outright.



### The French European Tour

THE French airmen, Commandant Weiss and Sergeant Assolant, started their European tour from Paris on August 11, and in two days 1,500 miles had been covered, when Rostoff was reached. Landings were made on the way at Cracow and Odessa. From Rostoff they went on to Kazan the next day, and reached Moscow on August 15. Their machine is a military Breguet biplane fitted with 450 h.p. Lorraine-Dietrich.

### Air Transport Contract

THE Glanzstoff Company has made an agreement with the German Lufthansa A.-G. for the air transport of their artificial silk products, a considerable sum of money being concerned in the transaction. Owing to the quantity of goods involved there will be a big reduction in the rates.

### Air Force Training

THE Air Ministry is investigating the system of Air Force training with the object of trying to reduce the number of air accidents. The original Gosport training methods are being considered, and it seems probable that they may be adopted again. Much attention was given to instruction in emergency landings at Gosport, and the side-slip and cross-wind landings were perfected. After the war these methods were regarded officially as too drastic. Some of the old Air Force instructors have been called to a series of conferences at the Air Ministry.

### Polish Air Chief's Fate

GENERAL ZAGORSKI, a former general officer commanding the Polish Air Force, disappeared recently after being released from prison, where he was sent after the revolution in May last year. One explanation is that he feared further trouble from the authorities, and another that he was the victim of a political enemy.

### Look Out!

LLOYD'S issued a warning to all ships at sea of the immediate attempts of two of the French competitors to cross the Atlantic.

### The Atlantic Patron

MR. RAYMOND ORTEIG, who awarded the £5,000 prize for the first successful flight between New York and Paris, which was won by Col. Lindbergh, has arrived in England from New York.

The start of this year's race is located near the seaplane station on the Lido. Competitors will fly anti-clockwise round a triangular course of 50 kms. (27.08 nautical miles), and seven circuits have to be completed, involving 20 turnings. The first leg is 11.4 kms. (6.16 naut. miles), and the first turning point—an obtuse angle—is at Porto de Malmocco. The second leg is 13.86 kms. (7.46 naut. miles) with a turning point—a sharp acute angle—off Chioggia. The last and longest leg is 24.74 kms. (13.46 naut. miles), and runs to the starting point—where the turning point is also very sharp. The total length of the course is 350 kms. (189.5 naut. miles).

Competitors may be started all together or at intervals, according to the decision of the Sports Commissioners. If started at intervals the order of starting will be drawn by lot. The start may be made either by taxiing over the starting line or by passing over it in flight, but the finishing line must be crossed in flight. Alightings and repairs are allowed during the contest.

Prior to the race seaworthiness tests will be held. H.M. Aircraft Carrier "Eagle" will be in attendance at Venice on behalf of Great Britain as well as four British destroyers.

In conclusion, the following list of previous Schneider Trophy winners may be of interest:—

- 1913 (Monaco). M. Prevost (France). Deperdussin mono, 160 Gnome. 45.75 m.p.h. (150 miles).
- 1914 (Monaco). C. H. Pixton (Gt. Britain). Sopwith bi., 100 Gnome. 86.8 m.p.h. (150 miles).
- 1919 (Bournemouth). Contest annulled.
- 1920 (Venice). Luigi Bologna (Italy). Savoia S. 19 boat, 550 Ansaldo. 107 m.p.h. (202 miles).
- 1921 (Venice). G. le Briganti (Italy). Macchi VII boat, 200 Fraschini. 111 m.p.h. (200 miles).
- 1922 (Naples). H. C. Biard (Gt. Britain). Supermarine boat, 450 Napier "Lion." 145.7 m.p.h. (200.2 miles).
- 1923 (Cowes). Lt. D. Rittenhouse (U.S.A.). Curtiss Navy C.R.3 bi., 465 Curtiss D-12. 177.38 m.p.h. (186 miles).
- 1924. No Contest.
- 1925 (Baltimore). Lt. J. Doolittle (U.S.A.). Curtiss Army R.3.C.2 bi., 510 Curtiss V-1400. 232.57 m.p.h. (188.86 miles).
- 1926 (Newport Roads). Maj. de Bernardi (Italy). Macchi M.39 mono., 800 Fiat. 246.496 m.p.h. (188.86 miles).

### Mass Flying

ON August 9 twenty-one fighting machines of the French Air Force under the command of Major Pinsard made a formation flight of 400 miles in 2 hrs. 58 mins. They left Cazaux just before mid-day and arrived at Le Bourget, Paris, at 3.15 p.m., calling on their way at Rochefort and Tours.

### A "Fairey" to the Rescue

A FAIREY seaplane ambulance saved the life of a wireless operator in British Guinea by conveying him to hospital in a few hours when he was dangerously ill with a violent fever. He would have died before any other means of transport could have reached the coast. The machine is owned by a mining company for the strict purpose of carrying patients to the hospital from the fever districts. The operator is now well on the way to recovery. This is not the first time that the aeroplane has been the means of saving life in this part of the world.

### Aviation in British Guiana

THE British Guiana Combined Court has accepted a Government motion to pay an annual subsidy of £3,300 for three years commencing from January 1, 1928, to the British Guiana Air Transport Company, Ltd. This sum will be for the Government's use of the company's seaplane or seaplanes for about 160 hrs. per year, the object being to encourage aviation in the Colony. The machine at present used in the Colony is a Fairey seaplane and has seen two years' service with the Real Daylight Balata Syndicate, although it has also been adopted on occasion for official purposes.

### New Aerodromes in Rhineland

THE Rhineland High Commission has granted permission for the erection of three aerodromes in the occupied territory. These will be at Kaiserslauters, Coblenz, and on the racecourse between Mayence and Wiesbaden.

### "Duralumin"

SOME of our readers may be interested to know that the valuable article on "Duralumin" by Leslie Atkinson, D.Met., B.Sc., F.I.C., M.I.A.E., which was published a while back in the "Aircraft Engineer," has now been reprinted in book form, being Volume II of "Flight Library." Copies may, therefore, be obtained through our publishers, price 7d. post free.

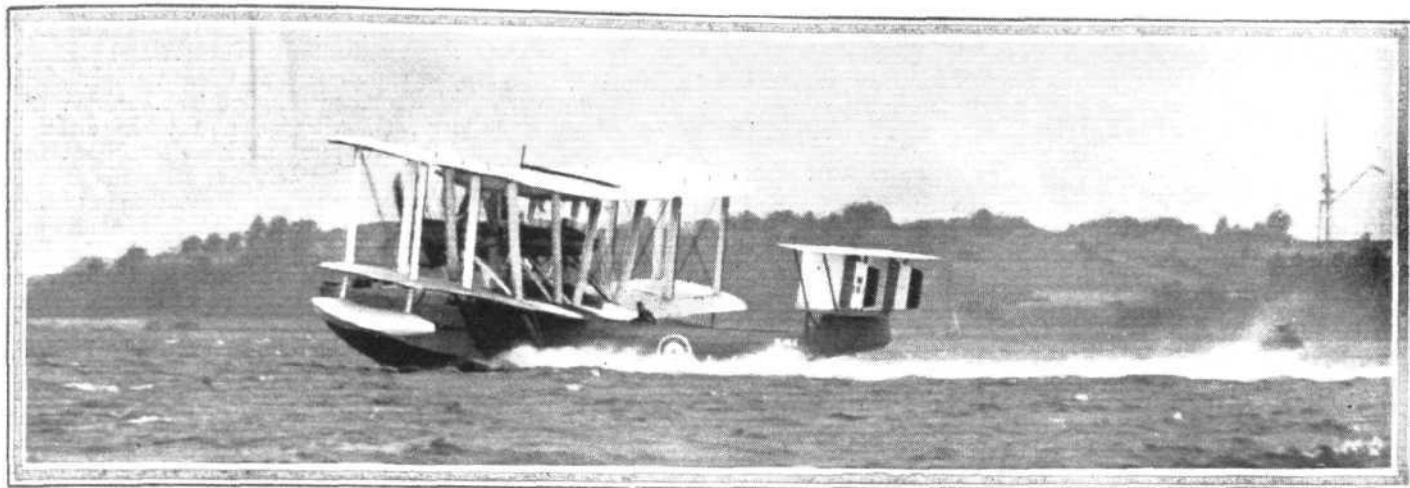
# THE R.A.F. SCANDINAVIAN TOUR

## Sir Samuel Hoare Travels to Oslo by Flying Boat

As previously reported in *FLIGHT*, a 3,000-mile cruise to the Scandinavian capitals by Service Coastal Reconnaissance flying boats is being carried out by the Royal Air Force, a start being made from the Felixstowe Air Station on Friday, August 12. This cruise is of more than usual interest, and is of considerable importance, for, apart from being in the

Copenhagen, where he is staying for the Aero Show there, which opens on Saturday, August 20. Incidentally, this is the first time that an Air Minister of any country has undertaken a long flight by flying boat, as well as being the first big foreign cruise to be made by a flight of large flying boats.

The three new types of flying boats employed for the



["*FLIGHT*" Photograph]

**THE AIR MINISTER DEPARTS:** Sir Samuel Hoare sets out from Felixstowe in the Blackburn "Iris II" (three Rolls-Royce "Condors") en route for Copenhagen, August 12.

nature of a "Show-the-Flag" tour of the Scandinavian countries, or its ceremonial aspect, the main object of the cruise is to provide a practical test of the three new types of flying boats taking part in the tour.

It also provides additional interest in that Sir Samuel Hoare, Secretary of State for Air, has taken an active part yet again in our "Aerial Operations," and was a passenger in one of the machines which set out on Friday. Sir Samuel, however, is only remaining with the tour until it reaches

cruise are—the Blackburn "Iris II," with metal hull, fitted with three 700 h.p. Rolls-Royce "Condor" engines, the Saunders "Valkyrie," which is also fitted with three "Condors," and the Short "Singapore," which has two "Condors." A fourth machine is included in the tour, a Supermarine "Southampton," fitted with two Napier "Lions"—the present standard coastal reconnaissance machine of the R.A.F.—but this is only going as far as Copenhagen, and will eventually bring back the Air Minister to Felixstowe.



["*FLIGHT*" Photograph]

**THE SERVICE SCANDINAVIAN CRUISE:** The Air Minister, Sir Samuel Hoare, with Lady Maud Hoare and daughters (centre) just before the start of the flying-boats from Felixstowe. In the group will also be seen Mr. Robert Blackburn (right) and next to him Sq.-Ldr. Scott (in command) and Wing-Comm. R. B. Maycock (Sir Samuel's fellow-passenger). On the extreme left is Lieut.-Gen. Sir Robert Whigham (G.O.C. Eastern Command).





[“FLIGHT” Photograph]

**DISCUSSING THE SCANDINAVIAN CRUISE:** Air Vice-Marshal Sir John Higgins (right), Wing-Comm. R. B. Maycock (centre), and Mr. C. P. Robertson (Press Section, Air Ministry), at Felixstowe.

Regarding the three new boats, we cannot, of course, say very much, except in a general sort of way. Each forms the latest development of flying-boat design and construction, and while all three were built to meet much the same requirements under service conditions, each have certain individual features. It is to test under practical conditions the comparative merits of these different features that such a cruise as this will, it is hoped, prove to be of great value, and indirectly provide some useful data regarding commercial air services employing flying boats such as these.

The Blackburn “Iris II” is a development of “Iris I,” to which reference has already been made in *FLIGHT*, but from which it differs mainly in that it has a metal hull. The latter is remarkable for its extensive accommodation—as an Irishman would say, it is exceptionally large for its size. Right in the bows is a cockpit for the gunner, etc.—it was here that Sir Samuel Hoare took his seat for the journey to Copenhagen. Behind this is the pilots’ cockpit, followed by the navigating cabin, and then the wireless compartment, and, behind this again the “sleeping and living” quarters, which include a kitchen! All are roomy and comfortable.

The Saunders “Valkyrie” is very similar in general appearance, the principal differences being that it has a wooden hull (“Consuta”) and a single instead of a biplane tail.

In the Short “Singapore” we have an all-metal job—the only one at present in service—the superstructure, as well as the hull being so constructed.

The Supermarine “Southampton” is, of course, well known to our readers, and calls for no further comment here.

All these boats, it may be mentioned, will be entirely independent of shore bases during the cruise—lasting about a month—and carry sufficient fuel for 600 miles, refuelling being carried out on the water. They are also, it may be added, carrying loads in excess of the normal Service loads.

On Friday last weather conditions at the time of the start from Felixstowe were by no means ideal, there being a stiffish breeze and a somewhat choppy sea. After the

farewells from a small party which had gathered on the slipway to witness the departure—and which included Lady Maude Hoare, Maj.-Gen. Sir Robert Whigham (General Officer Commanding Eastern Command), Air Vice-Marshal Sir John Higgins and Lady Higgins—Sir Samuel was taken aboard the “flagship,” the “Iris II,” shortly after 10 a.m. He was accompanied by his aide-de-camp and senior R.A.F. officer in the flight, Wing-Comm. R. B. Maycock (C.O. of the Seaplane Station).

The first pilot of “Iris II” was Sq.-Ldr. Scott, and Flight-Lieut. W. E. Dipple was second pilot. The personnel of the other boats were: “Valkyrie,” Flight-Lieut. L. Martin and Pilot Officer C. E. Chilton; “Singapore,” Flight-Lieut. B. C. H. Cross and Pilot Officer R. S. Darbishire. In addition, four airmen were carried on each boat. The “Southampton’s” crew included Flight-Lieut. F. W. W. Wilson, Pilot Officer W. G. Abrams, and three airmen. Maj. R. E. Penny, of the Air Ministry, was on board the “Valkyrie” as Civil Technical Officer.

The “Valkyrie” was the first to get away, taxiing some distance and throwing up much spray, before she became “unstuck.” Once up, however, she climbed rapidly and cruised around steadily, waiting for the others. The “Southampton” was next away, and made a very rapid take-off—unsticking in about 10 seconds.

After this the “Singapore” loosed off from her moorings, but engine trouble prevented her from getting into the air, and she had to return to her moorings—it being decided to make another start later. Then came “Iris II,” with its R.A.F. pennant flying from a wing strut. She got off as cleanly as the “Southampton,” getting into the air in under half a minute, and joining the others, all three flew off eastwards in formation.

The flying boats arrived at Esbjerg at about 1.30 p.m. and at 6.30 p.m. the “Iris II” reached Oslo, alighting in the harbour at Trognerkilen. Sir Samuel Hoare was received by representatives of the British Legation and Capt. Rüser Larsen, of the Norwegian Navy, who was second in command of the Amundsen Polar flight. The “Valkyrie” flying boat arrived shortly after, but the “Southampton” remained at Esbjerg.

The “Singapore” left Felixstowe on Saturday, August 13, and flew non-stop to Oslo, being joined after passing over Esbjerg by the “Southampton.”

The itinerary that will be followed during the cruise is:—

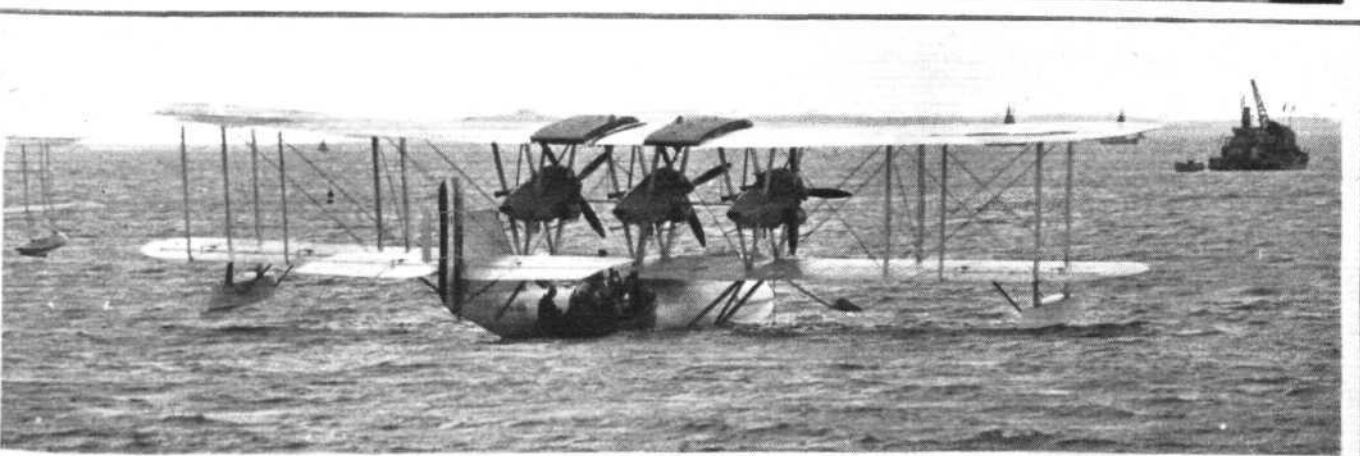
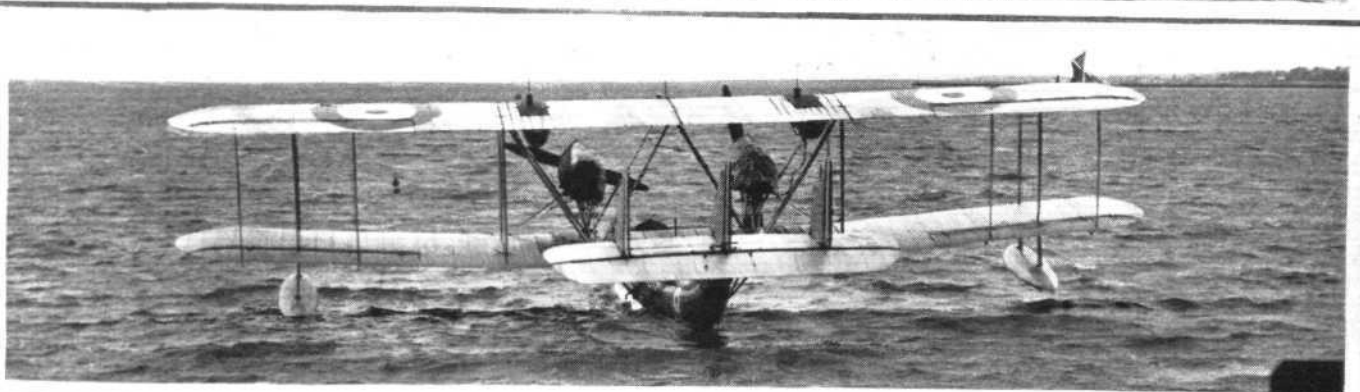
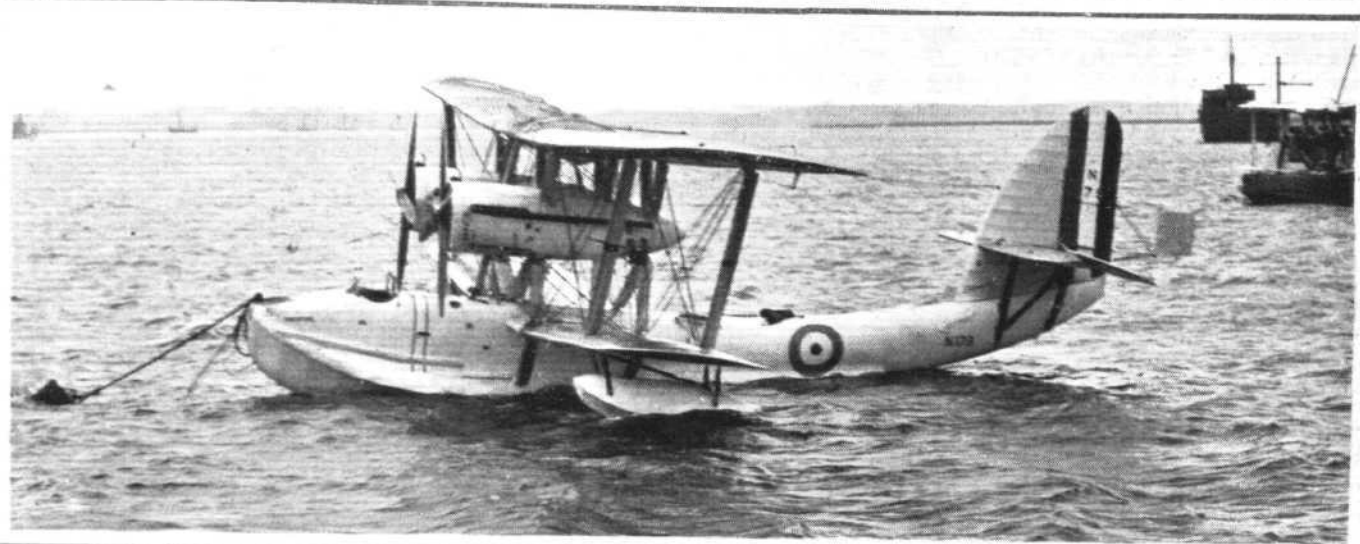
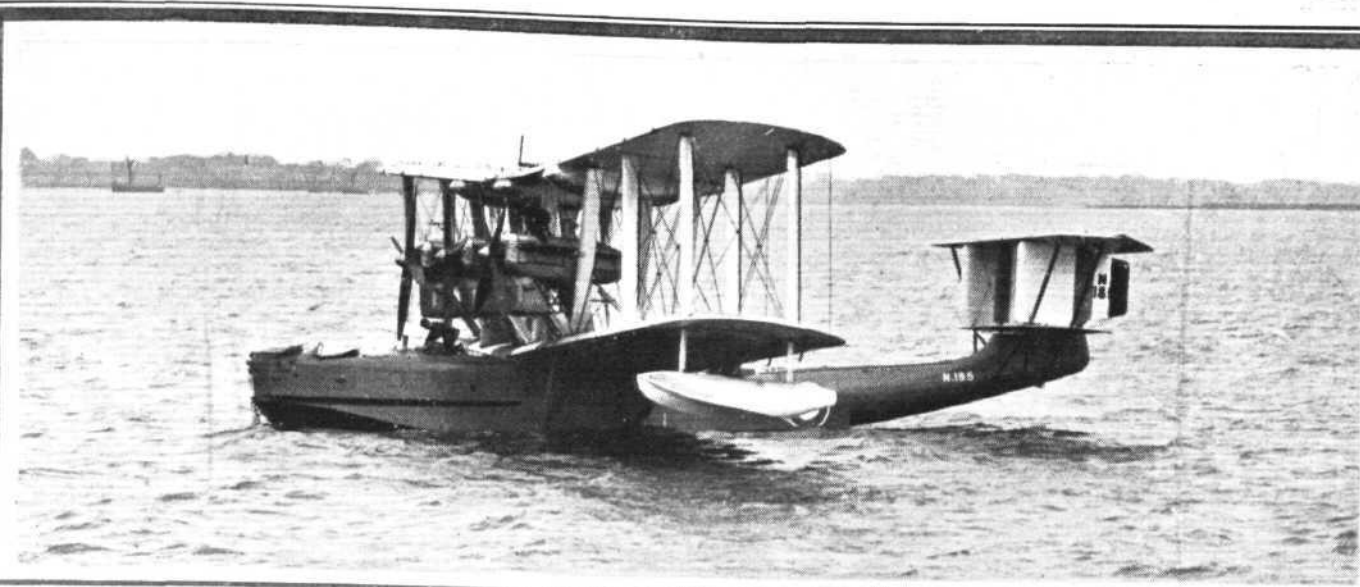
- Aug. 12-13.—Felixstowe—Esbjerg—Oslo.
- “ 19.—Oslo—Copenhagen.
- “ 20-22.—Copenhagen (Secretary of State stays here).
- “ 23.—Copenhagen—Gdynia.
- “ 27.—Gdynia—Danzig.
- “ 30.—Danzig—Helsingfors.
- Sept. 3.—Helsingfors—Stockholm.
- “ 7.—Stockholm—Copenhagen.
- “ 9.—Copenhagen—Helder.
- “ 11.—Helder—Felixstowe.



[“FLIGHT” Photograph]

**Flight-Lieut. F. W. W. Wilson sets out from Felixstowe for “Southampton” and Copenhagen. He will pilot Sir Samuel Hoare home after the Danish Aero Show—but not in the boat shown above.**





[ "FLIGHT," Photograph ]

THE SERVICE SCANDINAVIAN CRUISE: The four R.A.F. flying-boats which are taking part in a cruise round Scandinavia. At the top is the metal-hull Blackburn "Iris II" (three Rolls-Royce "Condors"); next the all-metal Short "Singapore" (two "Condors"); then the Supermarine "Southampton" (two Napier "Lions"); and the Saunders "Valkyrie" (three "Condors").

# PRIVATE



# FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

## AERODROMES OF ENGLAND

FOR a few years after the war there was a popular slogan in favour of a land fit for heroes to live in. We never hear even the echoes of that slogan now, so it is reasonable to assume that we now have a land fit for heroes to live in. But we are not so certain that we have a land fit for aeroplanes to live in, and they are quite as important as heroes. We build aeroplanes but we do not build aerodromes, although the former makes the latter imperative. We hear occasionally of feeble discussions about them, but we do not hear hammers about them. Yet flying is growing every week in this country. The "Moth" light aeroplane is being produced at the rate of three a week, and 50 per cent. of them are bought by private owners. We notice that a few towns have been in conference about the need of municipal aerodromes, some of whom came to the conclusion that the necessity was not urgent, whilst others, with wider imaginations, are still in the throes of uncertainty and adjournment. The latter probably realise that aerodromes must precede air traffic, and not air traffic precede aerodromes.

### A Useful War

So the position in this country in regard to aerodromes is in the abstract, whereas it ought to be in the concrete. It is a good job we had the war, otherwise we might not even possess those that we have; although it is quite possible we may have had no need for them, for it requires little brain to appreciate the rapid advance in aircraft design which necessity produced. There are so many aerodromes today that you can remember everyone of them easily. The R.A.F. has most of them, the Government has a few, each aircraft firm has one, the Light Plane clubs have one each, and beyond that the poor dog gets practically none at all. Despite this flying increases. Of course, although most of the aerodromes are owned by the Government and private firms, they are regularly used by private aircraft. They nearly exist as much for them as for their own aircraft. There are, perhaps, one or two R.A.F. aerodromes where great secrets are preserved, and which therefore do not welcome civil intruders, but apart from these solitary exceptions, facilities prevail for civil traffic.

### Cost of Landing

Actually, landings should only be made at R.A.F. stations in cases of real emergency, such as for refuelling when there is no alternative source, or for landing passengers making for destinations near the aerodromes. For small aeroplanes the landing fee is only a shilling, and the accommodation fees are one shilling for eight hours and half-a-crown up to twenty-four hours. The charges increase in proportion to the floor-space occupied by machines. Attendance may be obtained from the R.A.F. stations at a cost based on labour and time. Stores and spare parts are also obtainable, but only when no other supply is possible; and under these conditions minor repairs will be done. The scale of charges at ordinary civil aerodromes is fixed by the owners, but it must not exceed the Government scale, as given in the "Air Pilot." In some instances the scale is actually lower.

### Collective Data

Now, realising the need for collective information about aerodromes and landing grounds we have produced the map accompanying this article. We are fully aware that it is, perhaps, possible to land the average light aeroplane within a reasonable distance of any town in the United Kingdom. But that is, after all, knowledge in the abstract. What this map gives with every possible accuracy is the position of the existing aerodromes, including those of the R.A.F., the Government, the clubs and private owners, and also numbers of places that have been used successfully for landings by various pilots within recent times. For instance, much has been gleaned from a log of an air-taxi firm, who, perhaps, have a unique opportunity of collecting data. They are called upon to fly anywhere. Then there are the seventy-nine

landing grounds used by Mrs. Elliott-Lynn in one day. These were, in their order of use:—

Woodford	Tidworth	Cricklewood
Altrincham	Andover Aero-	Aerodrome
Winsford	drome	Hendon Aero-
Northwich	Worthy Down	drome
Sealand Aero-	Aerodrome	Stag Lane
drome	Bishops Waltham	Aerodrome
Shrewsbury	Hamble No. 1	Halton Aero-
Aerodrome	Aerodrome	drome
Coventry Aero-	Hamble No. 2	Letchworth
drome	Aerodrome	Duxford Aero-
Birmingham	Gosport Aero-	drome
Aerodrome	drome	Henlow Aero-
Hall Green	Tangmere Aero-	drome
Redditch	drome	Cardington
*Dinvin	Littlehampton	Martlesham
Bredon	Shoreham	Aerodrome
Tewkesbury	Oxney	Pulham Aero-
Cheltenham	Littlestone	drome
Gloucester Aero-	Lympe Aero-	Norwich Aero-
drome	drome	drome
Yate Aerodrome	Hawkinge Aero-	Bircham Newton
Filton Aerodrome	drome	Aerodrome
Somerville	Canterbury	Wittering Aero-
Dursley	Manston Aero-	drome
Chippenham	drome	Melton Mowbray
*East Carr	Maidstone	Loughborough
Yeovil Aero-	Penshurst Aero-	Nottingham
drome	drome	Grantham Aero-
Sherbourne	Biggin Hill	drome
Sturminster	Aerodrome	Cranwell Aero-
Newton	Kenley Aero-	drome
Blandford	drome	Digby Aero-
Wareham	Croydon Aero-	drome
Bournemouth	drome	Waddington
Old Sarum Aero-	Farnborough	Aerodrome
drome	Aerodrome	Brough Aero-
Netheravon	Brooklands	drome
Aerodrome	Aerodrome	Leeds
Upavon Aero-	*Southall	Newcastle Aero-
drome	Northolt Aero-	drome
Amesbury	drome	

\* Not shown on our map.

Where the information has been available we have given the approximate positions of the mere landing fields in relation to the nearest town or village.

### Descriptive Details

Some of our aerodromes have also facilities for seaplanes. At Brough aerodrome the field adjoins the River Humber and there are two slipways. Cattewater is in Plymouth Sound and is purely a seaplane station. The nearest landing ground is, perhaps, on Staddon Heights, which is at the mouth of the Sound, overlooking the Channel on the Devon side. It is not an ideal field, but it was used in cases of emergency during the war. It is at least conspicuous, and comparatively convenient for Plymouth. Lee-on-Solent has the dual facilities for seaplanes and aeroplanes, and so has Hamble. But seaplane flying does not as yet attract private owners. The racecourses are used at Warwick, Ripon, Derby, and Doncaster, and the sands at Silloth, Southport, Blackpool, Swansea, Westward Ho! and Rhyl. The old aerodromes are suitable for landings at Maidstone, Rugby, Chingford and Colwyn Bay, and the foreshore at Llanelly.

Our map shows most of the actual aerodromes thickly clustered in the south and east of the country, which is, of course, because their positions are dictated by defensive strategy, being mostly Air Force stations. This clearly reveals the need for aerodromes in positions purely dictated by a civil policy. In the present circumstances there are scores of important industrial areas remote from any aerodromes.

[Owing to pressure on our space Light 'Plane Clubs and certain other features have had to be held over.—ED.]





**AERODROMES OF ENGLAND:** With the regular increase of flying in this country the need for collective information of aerodromes and landing fields is becoming urgently necessary. This map shows the aerodromes in England, including those of the R.A.F., the Government, the Aircraft Firms and Clubs. It also includes a number of landing fields dotted about the country that are in actual use, and, where the information has been available, it gives their approximate position to the nearest town or village. Private owners can help to complete this map by recording the hundreds of other landing fields that must be suitable for private aeroplanes.





### Keen Race for "Dole" Prizes

EIGHT machines started on August 16 in the 2,400 miles' air race from the American coast to Hawaii for the James Dole prizes amounting to £7,000. One, "El Encanto," a monoplane piloted by N. Goodard and Lieut. Hawkins, crashed on taking off, both airmen escaping injury. The monoplane, "Oklahoma," piloted by B. Griffin and A. Henley, was the first machine off, and five others followed at one minute intervals; but three returned shortly after, although one took the air again later. This was "Miss Doran," a biplane, in which Miss Doran, a school teacher, was a passenger. The pilots were J. Pedlar and Lieut. Knope. The other machines in the race are: "Gabco," monoplane, piloted by L. Irving; "Golden Eagle," monoplane, piloted by J. Frost and G. Scott; "Aloha," monoplane, piloted by M. Jensen and P. Schuller; "Woolarao," monoplane, piloted by A. Gobel and Lieut. Davis; and "Dallas Spirit," monoplane, piloted by Capt. Erwin and A. Eichwaldt. The "Aloha" and the "Woolarao" have both been sighted by ships, flying well, the latter reporting good wireless signals. Unfortunately, three fatalities marred the preparatory flights for this event. Lieuts. Covell and Waggener, of the U.S. Navy, were killed on August 10 when their machine crashed at Point Loma, California, and Capt. A. V. Rogers, was killed whilst testing his machine at Monte Bello on August 13. He was an Englishman who served in the R.N.A.S. and the French Lafayette Escadrille during the war.

### The Cairo-Basra-Karachi Air Line

ON the Cairo-Basra air line the Imperial Airways liners covered 10,183 miles in 114 hours, flying during July with uninterrupted regularity. The average speed was 102 m.p.h. So far so good, but how about that Persian ban? Unless this unfortunate hitch can be settled soon it would seem that all the work and money spent on this important Empire air route will be more or less wasted. We are in entire agreement with *The Times* correspondent's suggestion that large flying-boats, like those now touring Scandinavia, may offer a possible solution.

### The Ford Reliability Trial

THE Ford Reliability Air Tour recently held in America proved to be an exceptionally interesting and successful contest. We had hoped to give our readers a detailed account of this competition, but pressure on our space during the last few weeks has prevented this. At the first opportunity, however, we will do so, but at the moment we can only record the following brief facts. The winning machine was

the Stinson monoplane, piloted by E. Stinson; of the 13 entries, 11 completed the full course and were "placed," one also completed but was not competing for the trophy, and two fell out.

### The Canadian Atlantic Attempt

THE proposed Canadian flight across the Atlantic will now be undertaken by Capt. T. B. Tully and Lieut. J. V. Medcalf, who have both resigned from the Ontario Patrol Service for the purpose. A Stinson monoplane will be used and the attempt will be made probably next month.

### Belgium's Air Plans

M. ALLARD, Technical Director of Civil Aviation in Belgium, left Evere Aerodrome, near Brussels, on August 11 for a flight to the Eastern Province of the Belgian Congo. His aim is to study the best way for an air line between Belgium and the Congo.

### Independent Iraq

IRAQ is planning its own air force, for next year it may not have the protection of the Royal Air Force. Already there are a number of Iraklis, both officers and men, now going through a course at R.A.F. stations. A few more have arrived and are now learning English before going into training, in all probability, at Cranwell. The withdrawal of the R.A.F. from Iraq would represent an annual saving of £4,000,000. The Iraq Government has to provide its own defence before the end of 1928.

### Above the Crater

THE Duchess of Bedford has left on another tour of Europe in her "Moth," piloted by Capt. C. Barnard. After visiting the Lido she is now continuing her journey through Italy. A stop was made at Pisa on the way from Venice to Rome, and Vesuvius was closely inspected from the air.

### Air Congress at Zurich

THE congress of the International Aeronautic Federation was opened at Zurich on August 15. The Gold Medal of the Federation has been presented to Sir Alan Cobham (for 1926) and the Marquis de Pinedo (for 1925), both of whom flew to the congress.

### By "Moth" to the Cape

LIEUT. R. R. BENTLEY, an instructor in the S. African Air Force, is flying to the Cape in his "Moth" machine shortly. It has been fitted with an extra petrol tank in the passenger cockpit, which allows a range of 11 hours' flying. Lady Bailey christened Lieut. Bentley's machine "Dorys" at the Stag Lane Aerodrome on August 16.

## GERMANY'S ATTACK ON THE ATLANTIC

THE Germans have made a bold effort to cross the Atlantic from east to west for the first time. Their start was something of a dramatic surprise, following unostentatious preparation. It concluded with an equally dramatic effect. The two Junkers machines, "Bremen" and "Europa," left Dessau in North Germany about 6.30 p.m. on August 14. They were accompanied by a third escorting machine, "G 31," which was due to return the next morning, but bad weather drove it back within a very short time. The "Europa" was next to find trouble with the weather. When over the Frisian Islands she met with thick fog, and each attempt on the pilot's part to clear it and reach the open sea was frustrated, and then he took the alternative course and tried for the English Channel; but here, not only was there fog, but a storm, too. Then engine trouble developed and the "Europa" wisely returned, just after 11 p.m. the same night, damaging the undercarriage and propeller on landing at Bremen.

The "Bremen" followed a different course, steering clear through storms over the North Sea and reaching the north of England. Fog prevailed at Newcastle, and the course was altered for Liverpool and the Irish Sea. Over Ireland the "Bremen" wandered at the mercy of

unfavourable conditions, sometimes flying very low. The effort to enter the Atlantic was eventually made along the south coast of Ireland, but a strong wind was met, and the weather ahead was so threatening that the "Bremen" wisely turned, having already lost five hours. On the return flight she crossed the west coast of England near Barrow, flew over the Pennine Chain to Hull, then turned south, and got to Calais via Dover. The last lap home to Dessau was made quickly in a helpful wind. She had been flying for 22 hours and a natural anxiety had prevailed in Germany over her adventure. The crew of the "Bremen" comprised Capt. Kohl, Herr Loose and Baron von Hahnfeld, and in the "Europa" were Herr Ristiez, Herr Edzard and Mr. Knickerbocker, the Hearst newspaper representative. In the escorting machine, "G 31," were Mrs. Knickerbocker, Fraulein Junkers, and many German journalists. Herr Ristiez and Herr Edzard made the world's duration record in the "Europa" on August 3-5.

The "Bremen" covered over 1,800 miles during her wandering flight. According to the latest reports the Junkers firm are not favourably disposed towards another attempt this year, owing to the improbability of suitable weather prevailing over the route.

# THE ROYAL AIR FORCE

London Gazette, August 9, 1927

## General Duties Branch

Capt. P. S. Mumford (Regular Army Reserve of Officers) is granted a short-service commn. as a Flight-Lieut. for three years on active list (Aug. 9). Pilot Officer H. E. Milton is promoted to rank of Flying Officer (July 6).

The following officers are transferred to Reserve:—Class A: Flight-Lieut. F. C. Boughton Greene (Aug. 10); Flying Officer R. H. Winn (Aug. 10). Class C: Flying Officer J. C. Walker (Aug. 9); Flying Officer G. A. Elliot, M.C. (Aug. 10).

Pilot Officer D. H. A. C. D. Patton-Bethune resigns his short-service commn. (Aug. 10). The short-service commn. of Pilot Officer on probation R. H. Griffith is terminated on cessation of duty (July 28).

## Stores Branch

Flying Officer C. S. Whellock is granted a permanent commn. in this rank with effect from Oct. 1, 1926, on completion of probationary service.

## Medical Branch

C. S. de Segundo, O.B.E., V.D., M.B., B.S. (Maj. R.A.M.C. (T.F.) (retd.)), is granted a temp. commn. as Flight-Lieut., with effect from and with seniority of July 25. The following officers are granted temp. commns. as flying officers on attachment to R.A.F. (July 18). They will continue to draw emoluments from Army sources. Temp. Lieut. A. P. McClare, Gen. List, Army (Dental Surgeon). Temp. Lieut. S. McC. Craig, Gen. List, Army (Dental Surgeon).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### Stores Branch

**Flight Lieutenants:** A. H. Comfort, to Marine Aircraft Experimental Establishment, Felixstowe, 21.7.27. E. L. Ridley, to No. 1 Flying Training School, Netheravon, 21.7.27.

**Squadron Leader** H. S. F. T. Jerrard, to Sch. of Tech. Training (Men), Manston; 25.7.27.

**Pilot Officer** P. H. Wilcox, to R.A.F. Depot, Uxbridge; 25.7.27.

### Accountant Branch

**Flying Officer** C. W. Cackett, to R.A.F. Depot, Uxbridge, 11.6.27.

**Flight Lieutenant** J. Sullivan, to Elec. and Wireless Sch., Flowerdown; 2.8.27.

**Flying Officers** W. E. V. Richards, to Marine Aircraft Experimental Estab., Felixstowe; 1.8.27. C. W. Price, to H.Q., Coastal Area; 21.7.27.

### General Duties Branch

**Squadron Leaders:** A. J. Butler, O.B.E., M.C., A.F.C., to R.A.F. Depot, Uxbridge; 8.8.27. M. B. Frew, D.S.O., M.C., A.F.C., to No. 1 Flying Training School, Netheravon; 24.7.27.

**Flight Lieutenants:** D. M. Fleming, to No. 30 Sqdn., Iraq; 9.7.27. E. D. Barnes, to Aircraft Depot, Iraq; 5.7.27.

**Flying Officers:** C. H. Brill, to R.A.F. Depot, Uxbridge; 18.7.27. W. G. Wainwright Pahey, to R.A.F. Depot, Uxbridge; 1.8.27.

**Pilot Officer:** D. K. Hewison, to No. 45 Sqdn., Egypt; 14.7.27.

The following officers relinquish their temp. R.A.F. commns. on return to Army duty (July 18). Flight-Lieut. A. Rhodes (Capt., Army Dental Corps). Flight-Lieut. N. F. Smith (Capt., Army Dental Corps).

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

The following are granted commns. as Pilot Officers on probation:—Class AA: A. M. Lester and B. P. W. Twist (July 28); M. B. Barclay and T. P. Mulcahy (July 29). Class B: W. A. E. Featherstone (Aug. 9).

The following Pilot Officers are promoted to rank of Flying Officer. E. R. Meads (Aug. 8); G. N. Warwick (Aug. 9).

The following Flying Officers are transferred from Class A to Class C:—E. M. Bates (July 9); F. V. Gauntlett (Aug. 9).

Flight-Lieut. H. Cooch relinquishes his commn. on completion of service, Aug. 1.

The following Flying Officers relinquish their commn. on completion of service:—C. H. Baker (Aug. 3). C. M. McClean (Aug. 5).

## AUXILIARY AIR FORCE

### General Duties Branch

The following to be Pilot Officers:—No. 603 City of Edinburgh (Bombing) Squadron—J. T. L. Shiells (July 22). 1. E. C. Watson (July 22). No. 605 County of Warwick (Bombing) Squadron  
Pilot Officer K. D. Foster resigns his commn. (Aug. 10).

### Medical Branch

**Squadron Leader** T. C. St. C. Morton, M.D., M.R.C.P., L.T.M. & H., to No. 2, Flying Training School, Digby, 2.8.27.

**Flight-Lieutenants:** J. MacC. Kilpatrick, M.B., to R.A.F. Depot, Uxbridge, 20.6.27. T. W. Wilson, to Aircraft Depot, India, 25.6.27.

**Flight Lieutenants:** J. B. Gregor, to R.A.F. Base, Mediterranean; 14.7.27. T. Sheehan, to R.A.F. Station, Donibristle; 22.7.27.

**Flight Lieutenant:** C. S. de Segundo, O.B.E., V.D., M.B., B.S., to Inspector of Recruiting, on appointment to a Temp. Commn.; 25.7.27.

**Flying Officer (Dental)** H. J. Eagleson, to R.A.F. Depot, Uxbridge, on appointment to a temp. commn.; 13.7.27.

**Flying Officers:** E. P. Carroll, to R.A.F. Station, Worthy Down; 2.8.27. G. W. McAleer, M.B., to R.A.F. Depot, Uxbridge; 2.8.27.

## NAVAL APPOINTMENTS

The following appointments were made on July 28 by the Admiralty:—**Lieutenants:** E. H. Shattock and S. C. Tuke, attached to R.A.F., for period "A" (Aug. 2).

The following appointments have been made by the Admiralty:—**Lieutenants:** H. C. Ranald, attached to R.A.F. for period "A"; August 2.

**Sub-Lieuts.** F. W. Bourne and P. D. Heinemann, attached to R.A.F. for period "A"; August 2.

**Lieutenant E.** (Flying Officer, R.A.F.): A. D. Merriman, to *Victory*, for R.A.F. Base, Gosport supy.; July 26.



**CAMBRIDGE UNIVERSITY AIR SQUADRON:** Our picture shows some members of the Cambridge University Air Squadron, taken during the attachment of the squadron to the School of Army Co-operation, Old Sarum, Salisbury, on the occasion of the visit of Marshal of the R.A.F., Sir Hugh Trenchard (Chief of the Air Staff). The group includes, reading from the third on left (sitting):—**Flt.-Lieut.** T. B. Bruce, M.C. (Chief Flying Instructor, C.U.A. Sq.); **Col.** The Hon. M. C. A. Drummond, C.M.G., D.S.O. (Dep. Director, Staff Duties, Air Ministry); **Flt.-Lieut.** R. V. Goddard (Instructor, C.U.A. Sq.); **Sir Hugh Trenchard**; **Wing-Comm.** J. B. Bowen, O.B.E. (Chief Instructor, C.U.A. Sq.); and **Air Vice-Marshal** Sir Ivo Vesey, K.B.E., C.B., C.M.G., D.S.O. (Director of Organisation and Staff Duties, Air Ministry). This Annual Attachment was in progress during the period June 19 to July 30, and consisted of three batches, each attending for a fortnight. During this time about 430 hours flying was carried out. Many of the members are taking commissions in the Reserve of Air Force Officers, while others are intending to take up aeronautics professionally or are likely to be active in furtherance of National Air-Mindedness in the future. The Squadron has been in existence for close on two years, during which time 70 Undergraduates have been given aeronautical and flying training.



## NOTICES TO AIRMEN

### Calshot Air Gunnery and Bombing Range

It is notified that:—

Air gunnery and bombing practice which takes place within the area and during the periods stated below, constitute a danger to aircraft except when flying above the minimum safety height.

No liability for accidents arising to aircraft from the use of this range will be admitted.

No special warning signals for aircraft will be displayed, but the usual flag signals will be employed at certain points whenever practice is in progress.

**Description and Position.**—A triangular-shaped area, the dimensions being approximately 2,000 yards at the sides and 1,500 yards at the base, the apex being Calshot Castle, Hampshire, and the area extending seaward towards Calshot Spit in the Solent. The area on the seaward side is delimited by red buoys, the centre of the area being Latitude 40° 30' N., Longitude 10° 18' W., and about 4 miles north of Cowes.

**Programme of Firing.**—From April 1 to October 31, on Mondays, Tuesdays, Thursdays and Fridays from 0830 hours to 1800 hours.

From November 1 to March 31, on Mondays, Tuesdays, Thursdays and Fridays from 0930 hours to 1500 hours.

**Minimum Safety Height above Sea Level.**—8,000 ft.

**Warning Signals.**—Red flags.

(No. 62 of 1927.)

## PERSONALS

### Married

Flight-Lieut. CUTHBERT CAUMONT BAZELL, R.A.F., third son of the Rev. Prebendary and Mrs. C. Bazell, Bridgwater, Somerset, was married on July 23, at St. Mary-le-Strand, to ELSIE AUGUSTA FIELD, daughter of Mr. and Mrs. A. H. Field, of Southwood Road, Eltham.

MAJOR JAMES ALPHEUS GLEN, of the Air Ministry, was married on July 27, at the Savoy Chapel, to the Countess O'BYRNE.

### To be Married

The marriage arranged between FLIGHT-LIEUTENANT CLIFFORD WESTLY BUSK and Miss E. M. MORRIS will take place at Bombay in September.

The engagement is announced between ADRIAN COCKS, R.A.F., younger son of the Rev. E. G. and Mrs. Cocks, Cornwood, Devon, and DORIS GWEN-ELLEN, daughter of Mr. and Mrs. E. A. FOSTER, West Ealing, and grand-daughter of the late Captain and Mrs. Foster, of Lostwithiel.

The engagement is announced between Mr. A. W. YOUNGHUSBAND, R.A.F., only son of Mr. and Mrs. Younghusband, of Moorsfort, Berrylands, Surbiton, and MARJORIE CONSTANCE, younger daughter of the Rev. W. F. SHILLITO, of Astley House, Parklands, Surbiton.

### Gloster Machines and their Designer

In our notes on the Gloster "Goral" which appeared in our issue of July 28 last, reference was made to the "Goring" and a recently designed modern carrier, in which we inferred that these machines were designed by Mr. H. P. Folland. We now learn that each of these machines was designed by Capt. (late R.A.F.) S. J. Waters, under the supervision of Mr. Folland. Capt. Waters is assistant designer to the Gloster Aircraft Co., Ltd., and from 1923 to 1925 he was chief draughtsman and assistant designer to the H. G. Hawker Engineering Co. Previously he was in the Royal Aircraft Establishment—from 1912 to 1917—and after joining the R.F.C. he was, for nearly three years after the Armistice, in charge of the Air Ministry Drawing Offices. Capt. Waters thus has some considerable experience in aircraft designing, and we are glad to have this opportunity of correcting any wrong impression regarding the origin of the machines referred to above that may have crept into our article owing to our ignorance at the time of the facts.

### The Royal Air Force Memorial Fund

THE usual meeting of the Grants Sub-Committee of the Fund was held at Iddesleigh House on August 11. Mr. W. S. Field was in the chair, and the other member of the committee present was Sqdn.-Ldr. Douglas Iron, O.B.E. The committee considered in all 12 cases, and made grants to the amount of £80 14s. 6d. The next meeting was fixed for August 25, at 2.30 p.m.

### Royal Air Force Flying Accident

THE Air Ministry regrets to announce that as the result of an accident at Farnborough to a Bristol Fighter aeroplane of No. 13 (Army Co-operation) Squadron, on August 1, Flying Officer Alexander Goodisson Boon (Lieutenant, Royal Scots), the pilot of the aircraft, and 363269 Leading Aircraftman Stanley Noel Vincent were killed.

### Erratum

ABSENCE through holiday time and a praiseworthy endeavour of "understudies" to be up to date with announcements when time was rather short for checking purposes, probably accounts for a few "slips" in the advertisement of A.D.C. Aircraft, Ltd., appearing in FLIGHT for August 11. Therefore, the following corrections in regard to that announcement should, at the request of A.D.C. Aircraft, Ltd., be noted:—(1) In the Grosvenor Challenge Cup, Mrs. Elliott-Lynn was first on a "Cirrus-Moth" and not "Avian." (2) Under the S.B.A.C. Challenge Cup, Capt. H. Spooner is shown as having taken second place, whereas he was disqualified and second place awarded to a "non-Cirrus" entrant. (3) Under the Pelham Stakes Mr. Bernard Martin is shown as third on a "Cirrus-Moth"—this is incorrect, as he was actually fourth.

## IMPORTS AND EXPORTS, 1926-1927

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

For 1910 and 1911 figures see FLIGHT for January 25, 1912.

For 1912 and 1913, see FLIGHT for January 17, 1914.

For 1914, see FLIGHT for January 15, 1915, and so on yearly, the figures for 1926 being given in FLIGHT, January 20, 1927.

	Imports.		Exports.		Re-Exports.	
	1926.	1927.	1926.	1927.	1926.	1927.
Jan. ..	494	1,850	130,049	49,021	—	—
Feb. ..	2,089	679	40,416	63,080	6,341	—
Mar. ..	1,001	7,087	92,840	106,478	9,758	2,270
Apr. ..	536	822	160,832	71,190	5,051	785
May ..	342	1,258	118,539	82,708	—	640
June ..	24,866	1,249	66,111	149,907	150	162
July ..	16,033	1,798	39,047	104,167	—	750
	45,361	14,743	647,834	626,551	21,300	4,607

## PUBLICATIONS RECEIVED

*Aeronautical Research Committee Reports and Memoranda:* No. 1077 (*Ae.* 258).—Lateral Stability with Special Reference to Controlled Motion. By H. M. Garner, M.A. Oct., 1926. Price 1s. net. No. 1080 (*Ae.* 260).—Note on the Reduction of Performance Tests to the Standard Atmosphere. By R. S. Capon. Jan., 1927. Price 4d. net. No. 1084 (*Ae.* 263).—A Paradox in Fluid Motion. By Dr. H. Lamb, F.R.S. Dec., 1926. Price 3d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

*U.S. National Advisory Committee for Aeronautics Reports.* No. 257.—Pressure Distribution over a Wing and Tail Rib of a Ve-7 and of a TS Airplane in Flight. By J. W. Crowley, junr. No. 258.—Some Factors Affecting the Reproducibility of Penetration and the Cut-off of Oil Sprays for Fuel Injection Engines. By E. G. Beardsley. No. 259.—Characteristics of Propeller Sections Tested in the Variable Density Wind Tunnel. By Eastman N. Jacobs. No. 260.—The Effect of a Flap and Ailerons on the N.A.C.A.-M6 Airfoil Section. By G. J. Higgins and Eastman N. Jacobs. No. 261.—Resistance and Cooling Power of Various Radiators. By R. H. Smith. No. 265.—Full-scale Investigation of Ground Effect. By E. G. Reid. U.S. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

## AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

### APPLIED FOR IN 1926

Published August 18, 1927

- 5,419. S. F. W. KOOLHOVEN. Propulsion of aerial machines. (274,533.)  
7,286. W. R. OLDFIELD. Planes for aircraft of the helicopter type. (274,534.)  
10,743. E. GEIPEL and F. FUGMANN. Semi-rotary i.c. engines. (274,570.)  
12,941. A. TAMMEO. Wing structure of aircraft. (252,712.)  
24,292. G. DRABEK and W. DRABEK. Flying machines. (274,680.)  
26,596. J. FRITSCH. Landing-gear. (260,301.)

### APPLIED FOR IN 1927

Published August 18, 1927

505. A. BUNKENBURG. Blades or vanes applicable to propellers, etc. (274,724.)  
2,579. MESSGERATE BOYKOW GES. Stabilization of aircraft. (265,949.)  
10,832. D. R. POBJOV. Crankshafts of i.c. engines. (274,774.)

## FLIGHT,

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